

# ARPIT JAIN

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## EDUCATION:

- **[July 2003 to present] Indian Institute of Technology Kharagpur, West Bengal, India**  
5<sup>th</sup> Year Undergraduate Student at the Department of Computer Science & Engineering for the **B.Tech/M.tech Dual Degree** Program (Master's Expected Completion Date – May, 2008)  
GPA: 8.35/10
- **[2002] Higher Secondary School (Air Force School, Jaipur)**  
Aggregate: 85.40%, Physics: 95%, Chemistry: 91%, Mathematics: 95%,

## RESEARCH EXPERIENCE:

- **IIT Kharagpur – M.Tech. Project (May 2007 to Present)**  
*Project Title* : “Vertical Search Engine for Academic Domain”  
*Supervisors* : [Prof. Pabitra Mitra](#)  
Developing a **Vertical Search Engine** for Educational Domain which would enable building of a resource library for use by an e-learning system. It involves development of a simple and intuitive e-learning web service (PHP, RoR) and then combining it with a state-of-the-art search and recommendation engine.
- **Veveo India Private Limited – Summer Internship (June 2007 to July 2007)**  
*Project Title* : “Customizing Web for Handheld Devices”  
*Supervisors* : [Prof. Pabitra Mitra](#), Mr. Rakesh Barve, Mr. Vineet Agrawal  
I worked on customizing Web Pages for Handheld devices like cellular phones, PDAs etc. Developed one search/rank engine which used to rank the sections of the web page based on the keyword and some other heuristics. Users are then presented with the ranked sections in that order on the device so as to enhance the browsing experience.
- **IIT Kharagpur – B.Tech. Project (July 2006 to April 2007)**  
*Project Title*: “Wrapper Induction Using Structural Similarity in HTML pages.”  
*Supervisor*: [Prof. Pabitra Mitra](#), Dept. of CSE., IIT Kharagpur  
The work involved the deduction of a new Structural Similarity measure to be used as a basis for clustering HTML and XML pages. The clustered pages are then put through Wrapper Induction algorithm after Active Learning to generate required Clusters. This is a **Yahoo sponsored** project.
- **University of Nebraska, Omaha– Summer Internship (May 2006 to July 2006)**  
*Project Title*: “[Debugger/Tracer for High Assurance Transformation Systems \(HATS\)](#)”  
*Supervisors*: [Dr. Victor Winter](#), Computer Science Department, UNO  
HATS is an Integrated Development Environment for strategic programming. Our group designed a Debugger/Tracer for HATS. More details about the project are available on HATS [site](#).

- [Deft Technologies](#), Noida– Summer Internship (May 2005 to July 2005)

*Project Title:* “Design and Analysis of Optical Packet Switched Networks”

*Supervisor:* Mr. Shubham Jain, Mr. Amar Gehlot.

## PUBLICATIONS:

- V. L. Winter, C. Scalzo, A. Jain, B. Kucera, and A. Mametjanov. Comprehension of generative techniques. In *Software Transformation Systems Workshop (STS)*, 2006. [[Abstract](#)] [[pdf](#)]

## TERM PROJECTS/PRESENTATIONS/CONFERENCES:

- *Term Projects:*

- Designed and implemented a **4-bit CPU** at the register level, as a part of the laboratory of the Computer Architecture course, under the guidance of [Prof. Dipankar Sarkar](#), Dept. of Computer Sc. & Engg., IIT Kharagpur. The main bottleneck was that the implementation required hardwiring the four-bit pedagogical CPU using basic IC chips, keeping in mind timing and other constraints. This work was done as a part of the Computer Architecture course. [Feb – Apr 2005].
- Developed a **Compiler** for a subset of the C-language, under the guidance of [Prof. Niloy Ganguly](#), Dept. of Computer Science & Engineering, IIT Kharagpur, as a part of the Compiler Construction course. This requires familiarity with the usage as well as inherent logic of various compiler generation tools, as well as writing our own basic generation tools. [Aug – Dec 2005].
- Developed a **Memory Management Unit** as well as implementation of semaphores for a basic OS, as a part of the Operating Systems course. [Aug – Dec 2005]
- Developed a **Heterogeneous Database System** which can access tables from different databases located at different places given only one query. This was done as a part of Database Management Systems Course.
- Implemented a **Ranking Scheme for product reviews** written by customers for various products. It ranks the reviews capturing their semantic information of the review and then ranking the ones with significant opinions higher than the less significant ones. This was done as a part of Information Retrieval Course.
- I also proposed a new scheme which when given a set of opinion scores, *characterizes the number of Significant Opinions in the group as a fuzzy function*, thus giving an idea as to how many significant opinions are present in the given opinion set. This was done as a part of Soft Computing Applications Course.

- *Presentations:*

- Delivered a seminar on **Optical Fibers Networking** at the Material Science Center, IIT Kharagpur.
- Delivered a seminar on **Multistage Interconnect Networks** at the Computer and Informatics Center, IIT Kharagpur.

- *Conferences:*

- Attended [International Workshop on Research Issues in Digital Libraries \(IWRIDL\)](#), 2006 held in Kolkata, India.
- Attended an IEEE workshop on Cryptography and Network security, held at Indian Institute of Technology, Kharagpur during September 2005.

## ACADEMIC ACHIEVEMENTS:

- I developed the gallery plugin for [IkiWiki](#), a Desktop wiki engine as a part of Google Summer of Code, 2007.
- Secured an All India Rank of **20<sup>th</sup>** in *screening* and **582** in *mains* out of more than 180,000 examinees in the IIT-JEE examination 2003.
- Secured an All India Rank of **2<sup>nd</sup>** out of more than 100,000 examinees in the Karnataka Common Entrance Test (KCET) 2003.
- Secured an All India Rank of **190<sup>th</sup>** out of more than 250,000 examinees in the All India Engineering Entrance Examination (AIEEE) 2003.
- Secured **4<sup>th</sup>** position in **Overnite-2006**, an algorithm intensive programming Competition organized in and by IIT Kharagpur, in which more than 300 teams from India participated.
- Our team secured **1<sup>st</sup>** position in inter-hostel **Product Design Competition** held as a part of Technology General Championship, IIT Kharagpur. We designed a **Question-Answering System** which used to scan given documents and answer questions asked from those documents in a reliable and accurate manner.
- Web Team Head of [Bitwise 2007](#), an online algorithm Intensive Programming Competition organized by Department of Computer Science, IIT Kharagpur.

## SKILLS:

- C, C++, Java, Ruby, Ruby on Rails, Perl, Python, JSP, PHP, MySql, JavaScript, HTML, XML, XHTML, CSS, Ajax, Lex/Flex, Yacc/Bison, Assembly

## COURSES TAKEN:

- *Core:*
  - Programming and Data Structures using C
  - Basic Electronics
  - Switching Circuits and Logic Design
  - Discrete Mathematical Structures
  - Design and Analysis of Algorithms
  - Computer Organization and Architecture
  - Formal Languages and Automata Theory
  - Probability and Statistics
  - Compiler Construction
  - Operating Systems
  - Computer Networks
  - Artificial Intelligence
  - Database Management Systems
  - Cluster and Grid Computing
  - Applied Graph Theory
  - Cryptography
  - Computational Statistics
  - Soft Computing
  - Complex Networks
  - Information Retrieval
  - Natural Language Processing
  - Object Oriented Systems (Implementation)

- Advances in Algorithms
- *Breadth:*
  - Mathematics module I and II
  - Electrical Technology
  - Signals & Networks
  - Physics I and II
  - Chemistry
  - Mechanics
  - English for Communication
  - Engineering Drawing and Computer Graphics
  - Mechanical Workshop
  - Sensor materials and Technology
  - Linear Algebra
  - Technology of Rubber and Rubber like Materials
  - Introduction to Financial Management.

*Pursuing this Semester:*

- Machine Learning
- Intelligent Systems
- Risk Management

**EXTRA CURRICULAR ACTIVITIES:**

- Computer Room and Networks Secretary of Rajendra Prasad Hall of Residence, IIT Kharagpur in the current session 2006-07. I am responsible for the maintenance of the Local Area Network of the Hall. This has helped me learn the nuances of the workings of communication networks.
- Secured 1st position in "Snappit-2006" a Photography Competition organized in and by IIT Kharagpur, in which more than 50 teams from India participated.
- Photography Secretary of Rajendra Prasad Hall of Residence, IIT Kharagpur in the session 2004-05.
- Editor of Arpian, RP Hall Magazine in the session 2004-05.
- Was part of National Cadet Core for one year in 2003-04.
- Was part of National Sports Organization for one year in 2004-05.
- Volunteer of the Fine Frenzy Team in Spring Fest'04 (Annual Cultural Fest of IIT Kgp).
- Sub-Head of the Photography Team in Spring Fest'05 (Annual Cultural Fest of IIT Kgp).
- Head of the Photography Team in Kshitij'06 (Annual Techno-Management Fest of IIT Kgp).
- Hobbies: Photography, playing Table Tennis, Basket Ball.

**REFERENCES:**

- Available on Request.